HOW to PAINT

F.S.

A
"HANDBOOK" FOR
HOUSEPAINT
USERS.
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"You may slight the work if you will, you may use seconds or commons instead of clear lumber, you may put mill finish instead of hand dressing, you may cover defects with paint and putty, and you may succeed in putting up a building which will be finally received on a final examination, and for which a diploma of merit may be awarded you. But you have to live in that house, and the longer you live in it the more will every defect become apparent, the greater will be your discomfort because of every dishonesty connected with its erection, and the more complete will be your humiliation and shame."—DR. J. H. CANFIELD.

R. R. DONNELLEY & SONS CO., PRINTERS, CHICAGO

NO thinking man builds for a day. Permanence in things worth having at all is one of the chief attainments to which every man bends his efforts. In nothing is this value of permanence more striking than in paint. In early ages the use of paint was for ornamental purposes. It remained, however, for the mechanical experts of a much later day to discover ways and means of making paints not only ornamental, but highly useful in protecting wood, steel, brick, and other structural materials from the inroads of the weather, and at a cost commensurate with the present value of labor.

The man who buys a pail of prepared paint and applies it with no thought as to the condition of the surface or of the atmosphere when he is at work will be quite apt to be disappointed with the results he secures from it. A worthy paint is worthy of a fair price and of fair treatment. When one is sick he consults a doctor; if you are in doubt about how to use your paint after reading this handbook, consult a painter, or one having had experience with paint and lumber.

This handbook is not a catalogue or price list, but, as its title implies, is a book of suggestions to paint users from paint makers of thirty years' experience in the making, sale, and use of paints. It explains the importance of noting the condition of the surface to be covered, the atmospheric conditions when the coating is applied, and the method of application.

A Factory View

Modern Paints

Paints may be divided into three general classes; viz., oil paints, varnish or gum paints, and water paints. We are now treating of oil paints; that is, pigments mixed and mulled with linseed oil, and designed for the purpose of bettering the appearance of, preserving and protecting, surfaces to which they are applied.

The construction of a paint that will withstand the expansion and contraction of the surface (caused by climatic changes) without cracking or wrinkling, and at the same time present a smooth, hard outer surface that will wash clean by rainfall, is the object of all paint makers. This would seem to the average paint user to be a comparatively easy task, until he takes into consideration the extreme thinness of a coat of paint, and the immense range of temperature, from 100 or more degrees Fahrenheit in midsummer down to 20 or more degrees below zero in midwinter.

Hardness and elasticity being diametrically opposite, the science of paint-making is in combining the liquids and solids in such a way as to meet the ever-changing conditions without tendency to crack in expansion; elastic, yet not gummy or tacky, allowing soot or dust to adhere—in other words, holding on successfully to both objects in view—appearance and protection.

Various kinds of wood expand and contract differently. Some are more absorbent of moisture than others, and under like conditions of exposure before paint is applied, such woods will take up more moisture; for instance, soft poplar *versus* hard pine. A good paint properly applied on a dry surface will prevent moisture from being absorbed, yet a good paint applied on a surface impregnated with an excess of moisture will not prevent the sun's rays from drawing the moisture outward. A cemented cistern will hold water *in*, while to cement a hole in the ground to keep water *out* is quite a different undertaking.

Painting

Painting as a useful art may be considered a process of waterproofing. Its special purpose is to prevent wood, brick, iron, or steel from becoming moist, and therefore the first duty of one intending to paint is to

Stock Room High Standard Liquid Paints

study the action of water upon these substances, and how to prevent it.

Lumber

The successful application of paint, whether for decorative or other purposes, requires a careful study and treatment of the surface to which it is to be applied. As nearly all of our troubles and complaints come from buildings of wood, it may be well to go to the lumber-yard occasionally to investigate modern methods of handling and treating it. It is not easy to-day to get sound, well-seasoned—that is, air-dried—lumber, and when it may be had few are willing to pay for it, and yet it is possibly better not to paint at all than to attempt to protect and preserve cheap kiln-dried or sappy lumber. Water and sap are the main causes of the rotting of wood, and kiln-dried lumber, even when seemingly dry, may on a damp day contain as much as twenty-five per cent of its weight in water. A coating of paint on such a surface prevents the moisture from escaping, and it remains, rotting the wood until warm sunshine or artificial heat converts it into a vapor, which in order to get out, raises the film of paint into blisters or cracks it.

The Effect of a Non-Elastic Coat of Paint Over an Elastic Coat

Old Paint

When the surface to be painted is covered with old paint it should be rubbed down smooth with wire brushes, or carefully scraped with a steel scraper, and then brushed off, so that loose particles and defective parts are removed. If the thickness of the old paint is so great that to insure good results its entire removal is necessary, then it should be burned off. Right here it may be well to state that paint rarely blisters or

Corner in Advertising Room

cracks when applied to wood from which old paint has been burned off, probably because all moisture has been driven out of it by the heat.

The Brush to Use

For heavy work in house-painting, such as siding or weather-boarding, the best brush to use is what is called a pound brush, i. e., a full, round brush with good elastic bristles six inches long. With one of them properly bridled, it is possible to apply, that is, rub out, worthy paint, so that it will wear three times as long as if flowed or smeared on with a wide wall-brush, made of cheap hog hair—a tool not much better than a common whitewash brush. We have often seen men apply good paint to buildings with a brush five inches wide, in order to save time. If one must use a flat wall-brush for painting, let him get one not over three inches wide and full or thick with good elastic bristles. "More painting and less paint," is the crying need to-day.

On new work before painting is begun, all knots and sappy places should be well coated with shellac varnish. After the first or priming coat has been applied, all cracks, nail holes, etc., should be filled with putty made of linseed oil and whiting.

Priming and Two Coat Work

The materials in the priming or first coat of paint should be preservative in character, and those used in subsequent coatings should be composed of materials that will protect this priming.

Where paint is limited to two coats, Lowe Brothers Liquid White, or a clean heavy White Lead mixed with raw linseed oil, makes a good primer, for it not only dries firmly, but it does not retard the drying of the next coat. We urge very strongly that such materials as yellow ochre, mineral, or metallic paints, cheap oils, etc., be carefully avoided. It

Chemical Tests

is extremely important that the priming coat be of the proper material, especially as to its drying and penetrating qualities. It is everywhere known that two coats of paint on new work cannot wear well, the layer of paint being too thin to offer satisfactory resistance to atmospheric influences. The first coat should be a "primer" in the strictest sense of the term, and the second should be a heavy-bodied, elastic coat; that is, a pigment must be used that will retain and protect the binder.

Three Coat Work

Given a fair surface to work on, it is always possible to get good results with our liquid paints when three coats are applied. For the first or priming coat the paint may be thinned with about one-half gallon of good raw linseed oil to one gallon of paint, depending upon the nature or condition of the surface to be coated and the temperature of the atmosphere. For the second or middle coat we advise the addition of a little spirits of turpentine to the paint to flatten it, and for the third or last coat, either the paint may be used as it is in the can, or a little raw linseed oil may be added if desired.

Painters and Paint-Making

Since the Civil War wonderful progress has been made in the science of paint-making, until to-day it is possible to get paint uniformly well prepared for almost any purpose.

The painter in this day and age should no more be called upon to mix his colors or *make* his paint than he should be asked to make his overalls or scaffolds.

The result of the development of the paint industry has been to advance the house-painter from a mere mechanic to the rank of a business man who employs artisans, skillful with the brush, and tasteful decorators. The contracting painter must decide many intricate questions—how the building should be painted, considering its size, surroundings, the purpose for which it is used (dwelling or business), weather prevailing while work is going on, the whims and fancies of the owner, frontage, exposure to direct rays of sun, the various materials of which the cornice, roof, and walls are composed, in order to apply that which will wear best on

Mechanical Tests

each, and at the same time have color in harmony, selecting that class of work each journeyman is best adapted to, calculating time required in order to say when another job can be commenced, etc., etc., without end, to say nothing of the vexing mathematical problems that daily confront him.

Liquid House Paints

Lowe Brothers High Standard Liquid Paints as originally made were designed to secure to the professional painter better results than could be obtained from the use of the so-called strictly pure white lead and strictly pure linseed oil then sold. It is not necessary to go into the subject of linseed oil and white lead manufacture. Suffice it to say, that either of them may be pure; that is, without any added adulterant, and yet be of very poor quality for house-painting. We were the pioneer makers of heavy-bodied liquid paints. We do not claim that our formulæ for making our liquid paints are unalterable, but rather that they are progressive, and that each year since we began manufacturing some change has been made in them after careful and systematic experiment. The difference between our products and those of many others is not due to any secret or mysterious process of manipulation and compounding, but rather to the care and attention that we give the selection of the materials used, and also the mulling and grinding. In this we are reinforced by ample capital, the best mechanical devices obtainable, skilled workmen and chemists. Lowe Brothers Liquid House Paints are better than others because we put into them both the quantity and quality of such materials as are necessary to make them better, and because nothing is put in to cheapen them or weaken the results.

Physical Tests

Our tests of raw material and finished products may be divided into three classes—chemical, mechanical, and physical tests. **Tests**

In the selection of pigments and liquids for paint-making, it is necessary to know that they contain no harmful ingredients, no useless and well-concealed adulterations, and that they in no respect fall below the quality and characteristics which our specifications call for. We have competent chemists, a well-equipped laboratory, and much special apparatus to give us the desired technical knowledge. **Chemical Tests**

Nothing is more valuable to the manufacturer of paints than the practical experience of an intelligent painter. The working, drying, and covering qualities of all our paints under a variety of conditions are carefully tested and recorded by skillful workmen under the direction of a master painter. It is a fact worthy of mention that in all the years we have been subjecting our house-paints to the most severe mechanical tests, while we have of course noted great difference, we have never known the paint to blister or peel off. This is unquestionably due to the fact that each coat has been applied with thought and care, and ample time has been allowed for drying. **Mechanical Tests.**

In some places architects and builders are specifying that weather-boarding shall be thoroughly primed before it is nailed to the studding. We cannot commend this practice too highly, for if done better results are sure to follow.

We mean by physical tests, weather tests, or the subjecting of boards and panels of various kinds of woods, painted with the stock to be tested, to the destructive forces of nature, such as sunlight, rain, frost, dew, etc. A moment's reflection will convince any one of the serious influence heat and cold have upon dried paint through the expansion and contraction of the surface covered. It is therefore, necessary to produce a paint with sufficient elasticity to cope with these conditions. No changes are made in the formulæ for any of our colors until after the proposed design has been subjected to systematic test for a sufficient length of time to demonstrate its value. We have a large museum of finished tests of this kind, which affords an interesting and instructive study of the subject. **Physical Tests**

WHY GOOD PAINT SOMETIMES FAILS

1st. Cheap, poor lumber under it.

2d. Moisture, sap, soot, or grease under it.

3d. Non-drying pigments, like ochre, metallic, etc., used in priming.

4th. Non-drying oils, or oily, fatty, non-drying paint used in priming.

5th. Flowing on paint like varnish instead of rubbing out well under the brush. Well brushed, thin layers are best.

6th. Insufficient quantity on new work. Two coats cannot wear well.

7th. Not allowing time for drying between coats.

8th. Excess of oil in the under coats, especially the middle one in three-coat work. Under coat, therefore, more elastic than top coat.

9th. Carelessness or lack of judgment in methods of application.

10th. Thinning too much with oil, turpentine, etc., to save labor and cost of material.

11th. In cold weather when fire is used for drying plaster, painting before the plaster is dry.

THINGS TO REMEMBER ABOUT PAINTING

1st. A porous surface needs more oil than a hard one.

2d. Boiled oil is more apt to crack than raw.

3d. Do not thin paint with oil or turpentine too much in order to save elbow grease.

4th. On old painted work, sometimes the first coat requires turpentine to make it stick.

5th. Turpentine often prevents blistering on work exposed to hot sunlight.

6th. In cold weather a little turpentine is often necessary in under coats, because oil thickens in cold weather, and is apt to dry too glossy.

7th. Under coats should dry harder and more quickly than those above them, forming a firm and unyielding foundation. The difference in drying between adjoining coats should not be very great. If the under coat dries glossy, succeeding coats will be apt to flat quickly, blister, crack, etc.

8th. In cold weather, do not paint until plastering is thoroughly dry.

9th. Never use cheap japan; the best only in cases of emergency.

10th. Good turpentine is crystal clear, not yellowish.

11th. Good linseed oil is clear, of pale yellowish color, and dries well. If it is of greenish color, it is made from impure or unripe seed. If it is cloudy, it is not well settled.

12th. Remember that to get good results with paint a good brush is necessary. One with plenty of good, stiff bristles in it will do good work, while a soft, flabby brush cannot do it.

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